PATENT APPLICATION
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE

BOARD OF PATENT APPEALS AND INTERFERENCES

Arthur Papier and Nancy Weyl - Appellants

Inventor:	**Arthur Papier et al.**	Conf. No.:	**4087**
Application No.:	**09/919,275**	Group Art Unit:	**3621**
Filed:	**July 31, 2001**	Examiner:	**Kambiz Abdi**

Title: **SYSTEM AND METHOD TO AID DIAGNOSES USING CROSS-REFERENCED KNOWLEDGE AND IMAGE DATABASES**

REPLACEMENT CLAIMS APPENDIX FOR APPELLANTS' BRIEF ON APPEAL

8. CLAIMS APPENDIX:

The following are the appealed claims:

1. (Previously Presented) A system to aid in a visual diagnostic process, comprising:

an image database;

a knowledge database, cross-referenced to said image database, for the purpose of assisting in the diagnostic process;

a user-interface to solicit, from a user, a plurality of descriptive characteristics of a sample requiring diagnoses;

a diagnostic engine, responsive to said characteristics, wherein said characteristics of the sample are employed by said engine to automatically identify, from a plurality of possible diagnoses, a subset including a plurality of diagnoses that are consistent with the characteristics; and

using the subset of diagnoses, automatically reorganizing an information space of said image database for concurrent presentation of a plurality of images for user review via the user-interface.

2. (Previously Presented) The system of claim 1, wherein said diagnostic engine operates dynamically, using the subset of diagnoses, to reorganize the information space upon modification of at least one of the plurality of descriptive characteristics by the user.

3. (Previously Presented) A method for aiding a visual diagnostic process, including the steps of:

creating an image database from a collection of images pertaining to a particular subject matter;

creating a knowledge database with other data related to the particular subject matter, wherein said knowledge database is cross-referenced to said image database, for the purpose of assisting in the diagnostic process;

collecting from a user, through a user-interface adapted to the particular subject matter, a plurality of descriptive characteristics of a sample requiring diagnoses;

in response to said descriptive characteristics, automatically identifying, from a plurality of possible diagnoses included within the knowledge database, a subset including a plurality of diagnoses consistent with the descriptive characteristics collected from the user; and

using the subset of diagnoses, automatically reorganizing an information space of said image database for concurrent presentation of a plurality of images related to the descriptive characteristics for user review via the user-interface.

4. (Original) The method of claim 3, wherein said diagnostic engine operates dynamically, using the subset of diagnoses, to reorganize the information space upon the user's modification of at least one of the plurality of descriptive characteristics.

5. (Previously Presented) A system for reducing diagnostic uncertainty using cross-referenced knowledge and image databases, comprising:

a user-interface to solicit a plurality of characteristics of diagnoses from a user;

a diagnostic engine, wherein said characteristics of diagnoses are employed to automatically identify, from a plurality of possible diagnoses for which data is stored in the knowledgebase, a subset including a plurality of diagnoses from the knowledgebase that are consistent with the characteristics; and

using the subset of diagnoses, automatically reorganizing an information space of the image database for presentation to the user, wherein the presentation is accomplished through the concurrent presentation of a plurality of images for user review.

6. (Original) The system of claim 5, wherein the plurality of images are presented as a diagnostic image stack.

7. (Original) The system of claim 6, wherein the diagnostic image stack comprises:

a subset of said plurality of images, each image in said subset being associated with a common diagnosis; and

an index into said subset of images wherein the index is independent of the common diagnosis.

8. (Original) The system of claim 6, wherein the diagnostic image stack is displayed to depict stages of disease progression.

9. (Original) The system of claim 6, wherein the diagnostic image stack is displayed to depict a plurality of images associated with a particular diagnosis.

10. (Original) The system of claim 5, wherein at least one image presented to the user includes a display of associated characteristics of diagnoses when a user selects a portion of an image being displayed.

11. (Previously Presented) The system of claim 5, wherein the presentation to the user is accomplished through a display, and where the display concurrently indicates textual information retrieved from the knowledgebase that is related to at least one of the subset of diagnoses.

12. (Original) The system of claim 5, wherein the diagnostic engine uses the characteristics of diagnoses to perform a pattern recognition operation on the knowledge database and to identify diagnoses with matching characteristics.

13. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics of diseases that have a dermatological manifestation.

14. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics of diseases that are of a visual findings type visible to the unaided human eye.

15. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics of diseases that are determined based upon a finding determined by mechanical examination means.

16. (Original) The system of claim 5, wherein the user-interface to solicit a plurality of characteristics includes at least one symptom represented as an icon.

17. (Original) The system of claim 16, wherein the icon is an image depicting the form of a dermatological lesion.

18. (Original) The system of claim 16, wherein the icon is an image depicting a distribution of the dermatological lesions about a patient's body.

19. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics of oral medications.

20. (Original) The system of claim 9, wherein the iconic representation is an image depicting the shape of an oral medication.

21. (Original) The system of claim 19, wherein the iconic representation is an image depicting a color of an oral medication.

22. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics determined during an autopsy.

23. (Original) The system of claim 5, wherein the system for reducing diagnostic uncertainty is applicable to and includes characteristics of a crime scene.

24. (Previously Presented) The system of claim 5, wherein the plurality of characteristics of diagnoses are selected from the group consisting of:

Travel History;

Occupation;

Exposures;

Radiological Signs;

Medications;

Habits;

Cutaneous Signs;

Morphology;

Dysmorphology;

Cutaneous Morphology; and

Distribution.

28. (Previously Presented) A system for cross-referenced access to image and knowledge databases for the purpose of assisting in the investigation of a death, comprising:

a user-interface to solicit a plurality of characteristics of the death, including at least one of the group of characteristics consisting of manner of death, wound type, sub-wound type, modality, and medical lexicon;

a diagnostic engine, wherein said characteristics of the death are employed to

identify, from a plurality of possible causes of death for which data is stored in the knowledgebase, a subset of causes from the knowledgebase that are consistent with the characteristics; and

using the subset of causes, reorganizing an information space of the image database for presentation to the user, wherein the presentation is accomplished through the concurrent presentation of a plurality of images for user review in the identification of the cause of death.